DOCUMENT RESUME

ED 147 042 RC 010 114

AUTHOR Geurin, Virginia; And Others
TITLE Adjustments to Modern Society by Youths from Rural Areas: A Longitudinal Analysis, 1965 to 1971. Bulletin 820.
INSTITUTION Arkansas Agricultural Experiment Station, Fayetteville.
SPONS AGENCY Economic Research Service (DOA), Washington, D.C. Economic Development Div.
PUB DATE Apr 77
NOTE 25p.; Not available in hard copy due to small print size of original document

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Academic Aspiration; *Adjustment (to Environment); Blacks; Caucasians; Comparative Analysis; *Employment Level; Futures (of Society); Grade Point Average; High School Students; Labor Market; *Longitudinal Studies; Males; *Occupational Aspiration; Place of Residence; *Racial Differences; Rural Schools; *Rural Youth; Self Concept; Seniors; Southern States
IDENTIFIERS *Arkansas

ABSTRACT

To determine how well rural youths were adjusting to modern society, a study on educational and occupational aspirations of male high school seniors from two counties in Southwest Arkansas was begun in 1965 and completed in 1972. A major finding in the first stage was that 70% of the 165 seniors (121 Whites, 44 Blacks) overaspired for their capability levels. In the follow-up in 1971, in which 126 responded (102 Whites, 24 Blacks), data revealed poor correspondence between occupational aspirations and actual achievement. Occupational attainment proved primarily to be a function of three variables: high school grade point average, residence outside Arkansas, and White racial identity. The study at both stages showed noticeable discrepancies between respondents' occupation plans and labor distribution for Arkansas and the nation. Differences between 1965 plans and 1971 outcomes were mainly functions of self-perceived job ability, residence, and perceived opportunity for job advancement. The mismatch between aspirations and attainment showed the need for high schools, as important agents in rural development, to provide more effective occupational counseling so students could realistically evaluate potential jobs. High schools should also better educate students for employment needs. (RS)

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ED147042

Adjustments to Modern Society by Youths from Rural Areas: A Longitudinal Analysis, 1965 to 1971

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United States Department of Agriculture

APRIL, 1977 BULLETIN 820

RC010114

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Adjustment to Modern Society by Youths from Rural Areas: A Longitudinal Analysis, 1965-1971

By Virginia Geurin, J. Martin Redfern, Bernal L. Green and Mary Jo Grinstead-Schneider[1]

This report describes the occupational adjustment of a group of Arkansas males who were high school seniors in 1965. The transition from school to work can be particularly difficult for young people, especially for those who leave rural areas poorly prepared for functioning in an increasingly urban, technologically oriented society.

In our complex society, the educational system must bear a major burden for equipping individuals to function adequately in a rapidly changing world. Formal education can promote a sense of human awareness and sensitivity to the world and develop individual initiative for leadership roles. Schools are a primary vehicle for the transmission of the skills, knowledge, and capabilities necessary for participation in the labor market. Schools can help nurture occupational aspirations and help in the development of job skills that are strategic and needed in contemporary society or they can offer training which is obsolete and confusing to those entering the labor market.

The educational system in the southern states has been criticized repeatedly for its failure to properly equip graduates with the necessary knowledge and skills. Documentation of this failure is provided by scores on Selective Service mental aptitude examinations. In 1971, the national rate of rejection on these tests was 3.9 percent. Rejection rates for the southern states[2] equalled or surpassed the national average, with percentages ranging from 3.9 in Texas to 21.1 in Mississippi (10).[3]

An advisory council report for Arkansas indicated that of every 100 students entering the first grade, only 56 graduate from high school, only 28 percent begin college, and only 14 percent complete college (1). Thus 44 percent drop out each year and may enter Arkansas' labor market relatively

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[2]Southern states include Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia.

[3]Numbers in parentheses refer to publications in section on Literature Cited.

unprepared. The council found that vocational-technical education, receiving less than 2 percent of the total educational budget, was attempting to serve the 72 percent of students not bound for college.

The council was sharply critical of what its members called an outdated educational system that refuses to recognize the basic problems of society. More specifically, the council maintained:

> "Most of our students are in an educational program designed to prepare youth for professions, knowing full well that the majority will drop out. Many of these students become social rejects, since the system does not provide education for the non-professionals" (1).

Inferior education is a deterrent to industrial development in the rural South. Studies by Till, et al. (13) and Walker (14) have shown that industries tend to bypass predominantly Black counties in the rural South, counties which have had a heritage of inadequate educational programs.

A major deterrent to improved education in the rural South is the outmigration of the young and better educated. Rural youth with high levels of aspiration and ability have tended to migrate to nonfarm areas. Johnson (5) and Pihlblad and Gregory (12) have shown that rural youth who move to urban areas tend to be of higher intelligence and capabilities.

Although many researchers have made the assumption that occupational aspirations are closely related to occupational achievement, there is little empirical evidence to support this contention. In 1955, Haller and Sewell, as reported by Haller and Miller (4), restudied rural males in Wisconsin who were first interviewed in 1948 as high school juniors and seniors. Results of the study showed only a moderately positive relationship between occupational aspirations and occupational achievement. In another Wisconsin longitudinal study, Kohout and Rothney (7) found that approximately 86 percent of 321 male respondents were not employed in the job category to which they had aspired some 10 years earlier.

In a later study, Kuvlesky and Bealer (8) found a weak positive relationship between occupational aspirations and attainment. Their original 1947 sample consisted of 1,327 male high school sophomores from 74 rural high schools in Pennsylvania. Ten years later, 1,001 of the original sample were re-interviewed. From their work, Kuvlesky and Bealer concluded that "...adolescent aspirations are not good predictors of long-run attainment, but that they do play a directional role."

Repeated findings of a lack of close congruence between adolescent occupational aspirations and later achievement reveal a need to examine closely the adjustment of youths to the larger society. Are unrealistic aspirations a deterrent to later occupational adjustment? Are youths aspiring to enter occupations for which there are few projected openings? Are schools providing training that is responsive to labor market needs? To answer these and other questions, researchers asked young Arkansans about their hopes, educational preparation, and work achievements. Their personal accounts should be of considerable interest to planners and policy

makers who are committed to revitalizing rural America. Community leaders, recognizing the important role of education in the process of rural development, need valid information on how well their youths are adjusting in modern society. If public institutions, such as schools, are to meet the needs of society, they should be responsive to the vocational and personal requirements of youth.

The effectiveness of policies and programs can be enhanced by tailoring them to meet the special needs of target groups. To better determine the needs of young Arkansas adults, a broad research effort was begun in 1965 (3, 6) and completed in 1972 (2). The study, based on a sample of male high school seniors from two counties in Southwest Arkansas, focused on educational and occupational aspirations and achievements.

The longitudinal nature of the study (of the 165 participants in the first stage, 126 took part in the second stage) provided an opportunity to investigate the importance of selected variables in influencing aspirations and achievements. The variables investigated may be divided into six categories: 1) motivational, 2) capabilities, 3) availability and accessibility of training and educational facilities, 4) attitudes toward place of residence, 5) occupational opportunities in the local areas, and 6) availability of information to the individual concerning his potentialities and occupational opportunities.

The 1965 Stage of the Study

The first phase of the study was completed in 1965. Various aptitude, achievement, and personality inventories (see Appendix), as well as selected demographic questions, were directed to 165 senior males in 10 high schools (7 white and 3 black) in Little River and Sevier Counties in Southwest Arkansas.

The authors' major finding was that 70 percent of the sample overaspired for their capability levels. Also, in some occupational categories, wide discrepancies were found between the students' occupational plans and projected 1970 U.S. labor needs. For example, while 55 percent of the students chose "professional, technical, and kindred occupations," the 1970 occupational projection indicated that only about 14 percent of the work force would be needed in those jobs (6).

The 1972 Stage of the Study

The follow-up study six years later focused on: 1) levels of occupational attainment, 1965-71; 2) shifts in Occupational Aspiration scores, 1965-71; 3) differences between occupational plans in 1965 and outcomes, 1965-71; 4) occupational outcomes by 1971 and needs in Arkansas and the United States; and 5) socioeconomic factors affecting geographic mobility.

Supplementary to these objectives was the need to assess broadly the sample members' education and income achievements and other changes that occurred over the six-year period, 1965-1971.

Of the 165 students (121 Whites and 44 Blacks) in the 1965 sample, 126 (102 Whites and 24 Blacks) supplied information for the 1971 study. With regard to residence of the 126, 89 (71 percent) were living in Arkansas, and 37 resided outside Arkansas.[4] Those who participated in the follow-up study were a self-selective group who were disproportionately White and tended to be above average in measured capabilities and 1965 Occupational Aspiration scores.

The longitudinal characteristic of the study provided a rare opportunity for inference of causal relationships in explaining occupational and educational achievements of rural youth. Changes in Occupational Aspirations were studied to determine which variables influence an individual to raise or to lower aspirations.

In choosing a time to conduct the study, it was necessary to weigh the advantages of waiting longer and possibly learning more about the subjects against the probability that fewer of the sample members would be recovered for study at a later date. The percentage of recovery of subjects is a function of the time that elapses between studies (9). The necessity for a high recovery rate was the major determinant of the decision to conduct the study in 1971.

In an effort to follow-up those who had participated in the 1965 study, letters were sent to the last known address of each sample member. Former classmates assisted in locating those who could not be reached by mail.

Personal interviews were used wherever feasible; the remainder of the respondents were queried by mail. Ninety-three of the sample members were in Arkansas or near enough to the state that it was feasible to send representatives to interview them personally. For the group to whom questionnaires were mailed, a technique of enclosing a small cash incentive was used. An 80 percent return rate on the mailed interviews was achieved through one mailing with an enclosed 50 cents incentive, and one follow-up mailing. The over-all response rate for both mailed and personal interviews was 71 percent. This was considered an excellent rate of response for the 13-page questionnaire.

Respondents were queried about their present job status and future occupational aspirations so that 1971 Occupational Attainment and Occupational Aspiration scores could be calculated and compared with 1965 scores.

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[4]After the 1965 study, a procedure for maintaining contact with sample members was initiated. Every year after 1966 a stamped addressed card was mailed to each of them. This annual reporting procedure enabled the researcher in the subsequent stage of the study to obtain a 75 percent recovery rate in the 1971 study.

Analysis of the Longitudinal Data[5]

Statistical analysis of the data consisted of three multiple-regression equations. Full multiple regression was used in conjunction with stepwise regression. Instructions for the stepwise regression specified that all variables not significant within the equation at the 5 percent level be dropped from the equation.

Model One

Occupational Attainment scored according to the North-Hatt Scale (11) of occupational prestige, was the dependent variable in the first model.[6] The independent variables and their coefficients of partial correlation are provided in Table 1.

Variables measuring abilities and accomplishments had the highest correlations with Occupational Attainment. Reading speed and comprehension as measured by the Davis Reading Test showed partial correlations with the dependent variables of 0.41 and 0.40, respectively. The General Intelligence variable correlated at 0.37, Grade-point Average at 0.36, and Capability Score at 0.34.

All but three variables were eliminated by the stepwise regression (Table 2). Grade-point average and residence outside Arkansas were positively related to Occupational Attainment and statistically significant at the 1 percent level of confidence. Black racial identity was negatively related to Occupational Attainment at the 5 percent level of confidence.

Model Two

The shift in Occupational Aspiration scores between 1965 and 1971 was used as the dependent variable in Model Two. Results from the 1965 study indicated that many of the Occupational Aspiration scores reflected unrealistic aspirations. By 1971, the researchers hypothesized, Occupational Aspirations would be more realistic appraisals of levels that individuals could expect to reach. Variables used in Model Two and their partial correlation coefficients with the dependent variable are shown in Table 3.

Results from the stepwise regression showed that the 1965 Occupational Aspiration score was negatively related to the dependent variable (Table 4). That is, the higher the 1965 Occupational Aspiration

[5]Results based on t-tests of mean differences in selected variables indicated that some selectivity was associated with participation in the follow-up study. General Intelligence, grade point average, capabilities, and Occupational Aspiration scores in 1965 were substantially higher for the group who participated in the follow-up study than for the group who did not participate. The reader should be aware of this selectivity in interpreting findings.

[6]These are gross ranking scores which were assigned on the basis of occupational prestige as reflected in the opinions of a nation wide sample conducted in 1947 by the National Opinion Research Center. A 1963 replication showed that few shifts had taken place.

Table 1. Full Model One: Rank of Variables Correlated with North-Hatt Scores of Occupations[1]

Partial correlation with NORC Score	Rank	Variable identification
.41	1	David Reading Test - Speed
.40	2	Davis Reading Test - Comprehension
.37	3	Occupational Aspiration Score, 1965
.37	4	General Intelligence Score - GATB
.36	5	Grade-point average
.34	6	Capability score
.34	7	Sociability - Guilford-Zimmerman Temperament Test Score
-.33	8	Mechanical Interest - Kuder Interest Test Score
.31	9	Ascendance - Guilford-Zimmerman Temperament Test Score
.31	10	Extra-Curricular Activities in high school
.29	11	Residence outside of Arkansas
.28	12	Social-Class Value Orientation Inventory - Total
.21	13	Persuasive Interest - Kuder Interest Score
-.21	14	Race - Black
.19	15	General activity - Guilford-Zimmerman Temperament Test Score
.18	16	Perception of parents' feeling about importance of son's job
.18	17	Acquaintance with someone making salary respondent plans to make in 5 years
.16	18	Thoughtfulness - Guilford-Zimmerman Temp. Test Score
-.15	19	Outdoor Interest - Kuder Interest Test Score
.14	20	Scientific Interest - Kuder Interest Test Score
.13	21	Objectivity - Guilford-Zimmerman Temp. Test Score
.11	22	Emotional stability - Guilford-Zimmerman Temp. Test Score
.10	23	Computational Interest - Kuder Interest Test Score
.08	24	Restraint - Guilford-Zimmerman Temperament Test Score
.06	25	Financial help parents able to give for education
.05	26	Marital status - Married
.04	27	Personal relations - Guilford-Zimmerman Temp. Test Score
.02	28	Parents' Income in Relation to Community
-.02	29	Willingness to move
-.02	30	Masculinity - Guilford-Zimmerman Temp. Test Score
-.01	31	Friendliness - Guilford-Zimmerman Temp. Test Score
0	32	Perception of job as having opportunity for advancement

[1]Multiple R^2 = 0.59

F-Statistic = 2.3025 with 32 and 52 df

The probability of obtaining an "F" this large or larger by chance when the hypothesis of no correlaton is true = 0.0037.

Table 2. Results of the Stepwise Regression for Model One, Reduced Model: North-Hatt Scores of Jobs Regressed on Selected Variables[1]

Variable	Regression coefficient	t-Statistic[2]
Constant term	51.78	
Grade-point average	5.26	3.5885**
Black	-5.61	-2.0019*
Residence outside Arkansas	8.60	3.2242**

[1]Multiple R^2 = 0.25
F-Statistic = 9.2360 with 81 and 3 df
The probability of obtaining "F" this large or larger by chance when the hypothesis of no correlation is true = 0.00004.
[2]*Significant at 5 percent level;
**Significant at 1 percent level.

Table 3. Full Model Two: Rank of Variables Correlated with the Shift in Occupational Aspirational Scores between 1965 and 1971[1]

Partial correlation with shift in OAS	Rank	Variable identification
-.52	1	1965 Occupational Aspiration Score
.18	2	Plans for technical training in next five years
-.17	3	Emotional stability, Guilford-Zimmerman Temp. test score
-.17	4	Unwillingness to leave Arkansas if necessary to find job and salary wanted
.13	5	Plans for attending college in the next five years
.13	6	Perception of job as having opportunity for advancement
-.12	7	Discrepancy between capability and 1965 OAS
-.12	8	Vocational technical training taken
.11	9	Rural-Urban Orientation Score
-.10	10	Acquaintance with someone making salary respondent plans to make in five years
.08	11	Capability Score
.08	12	Race - Black
.08	13	Marital status - married
.07	14	Thoughtfulness, Guilford-Zimmerman Temp. test score
-.06	15	Objectivity, Guilford-Zimmerman Temp. test score
-.06	16	Residence outside Arkansas

[1]Multiple R^2 = 0.55
F-Statistic = 6.3090 with 16 and 83 df
The probability of obtaining "F" this large or larger by chance when the hypothesis of no correlation is true is greater than 0.01.

Table 4. Results of the Stepwise Regression for Model Two, Reduced Model: Regression of the Shift in OAS Scores on Selected Variables[1]

Variable	Regression coefficient	t-Statistic[2]
Constant	.2458	
1965 OAS Score	-.3768	-8.1155**
Unwillingness to leave Arkansas if necessary to find job and salary wanted	-3.0002	-3.2892**
Plans for attending college in the next five years	.2517	3.6615**
Plans for technical training in the next five years	2.1970	2.0465*

[1]Multiple R^2 = 0.49
F-Statistic = 9.7037 with 4 and 90 df
The probability of obtaining "F" this large or larger by chance when the hypothesis of no correlation is true = 0.00001.
[2]*Significant at 5 percent level;
**Significant at 1 percent level.

score, the greater the likelihood that the individual shifted his aspirations downward.[7] Additionally, those who were not willing to leave Arkansas reduced their Occupational Aspirations more than those who were willing to leave the state. These results corroborated results from the first model which showed that high Occupational Attainment was positively related to residence outside Arkansas.

Another important finding from the reduced model was that those who planned to attend college or take technical training in the next five years were likely to have shifted their Occupational Aspirations upward (Table 4), with relationships statistically significant at the 1 and 5 percent confidence levels, respectively.

Model Three

Model Three was designed to determine variables that were related to *differences between occupational plans and outcomes.* The dependent variable was formulated by taking the North-Hatt score for the occupation the individual planned to enter and subtracting it from the North-Hatt score for the occupation he had actually entered. Only 73 observations were usable in this model because of the need to have both scores. At the time of the 1965 study, several sample members said that they did not have occupational plans, and several respondents were not employed full-time at the time of the 1971 study. Variables included in the full regression model are shown in Table 5.

[7]The greater the distance of initial scores from the mean, the greater the likelihood that subsequent scores will be closer to the mean. This statistical tendency, termed regression toward the mean, may explain a part of these shifts in Occupational Aspiration scores.

Table 5. Full Model Three - Rank of Variables Correlated with the Difference in North-Hatt Score between Job Planned and Job Held[1]

Partial correlation with difference	Rank	Variable identification
.33	1	Preference for living in Arkansas
.27	2	Consideration of looking for a job only in Arkansas
.26	3	Marital status - Married
.24	4	Mechanical interest score - Kuder Interest Test
-.23	5	Unwillingness to leave Arkansas if necessary to find job and salary wanted
-.20	6	Manual Dexterity Score - GATB
-.19	7	Perception of job as having opportunity for advancement
-.19	8	Sociability - Guilford Zimmerman Temperament Test
-.18	9	Motor Coordination Score - GATB
.17	10	Social-Class Value Orientation Inventory - Total score
.17	11	Degree of satisfaction with job
-.17	12	Preference for living outside Arkansas
.16	13	Masculinity - Guilford-Zimmerman Temperament Score
-.16	14	Amount of financial help parents able to give toward education
.15	15	Perception of parents' feeling about importance of son's job
.12	16	Perception of ability to do job above-average
-.11	17	Years of college training
.10	18	Thoughtfulness - Guilford-Zimmerman Temperament Score
.10	19	Race - Black
.09	20	Size of place and residence
.07	21	Grade-point average
.06	22	Marital status - Married
-.04	23	Davis Reading Test - Comphrehension
-.04	24	Ascendance - Guilford-Zimmerman Temperament Score
-.03	25	Verbal Intelligence Score - GATB
-.03	26	Emotional stability - Guilford-Zimmerman Temperament Score
-.03	27	Capability score
.02	28	Personal relations - Guilford-Zimmerman Temp. Score
-.02	29	General intelligence Score - GATB
.01	30	Objectivity - Guilford-Zimmerman Temperament Test Score
.01	31	Perception of parents' income in relation to others in community
.01	32	Friendliness - Guilford-Zimmerman Temperament Test

[1]Multiple R^2 = 0.63
F-Statistic = 2.0211 with 32 and 38 df
The probability of obtaining "F" this large or larger by chance when the hypothesis of no correlation is true is greater than .05.

Three variables in the Reduced Model were statistically significant at the 5 percent level (Table 6). The individual who perceived that his job ability was above average was likely to have a greater difference between his Occupational Attainment and Occupational Aspiration than the person who thought his ability was average or lower. For these individuals, attainment exceeded aspiration. The perception that one's job afforded opportunity for advancement minimized the disparity between aspiration and attainment; occupational aspiration tended to be higher than current job attainment for those who believed that their jobs provided potential for advancement. The importance of residence again was underscored in this analysis. The individual who stated a preference for living in Arkansas rather than outside the state had a greater difference between levels of job attainment and job aspiration than those who stated no residence preference. For those wishing to remain in the State, aspirations were higher than attainment.

Participants versus Non-Participants

The 1971 follow-up study resulted in two basic groups: those of the 1965 sample who participated in the follow-up study and those who failed to respond. The extent of difference can be measured using 1965 scores. Means and the corresponding standard deviations were calculated for participants and non-participants for the following variables: 1) Capability Score; 2) 1965 Occupation Aspiration Score; 3) Discrepancy between OAS and Capability; 4) General Intelligence from the GATB; and 5) Grade Point Average.

In addition to calculating means and standard deviations, the Difference Between Means Test was used to evaluate the difference between participants and non-participants. Table 7 shows the appropriate statistics.

Table 6. Results of Stepwise Regression for Model Three, Reduced Model: Regression of Discrepancy between Job Planned and Job Held on Selected Variables[1]

Variable	Regression coefficient	t-Statistic[2]
Constant term	9.584409	
Perception of above-average ability	8.2575702	2.6561**
Preference for living in Arkansas	20.272406	3.6941**
Perception of job as having opportunity for advancement	-8.6354510	-2.4599**

[1]Multiple R^2 = 0.23
F-Statistic = 6.5570 with 3 and 67 df
The probability of obtaining "F" this large or larger by chance when the hypothesis of no correlation is true = 0.0007.
[2]**Significant at 1 percent level.

In four of these six tests, significant differences were found. Means for the capability score for the group that took part in the follow-up study was significantly higher at the 5 percent level than the mean capability score for those who did not participate in the follow-up study. There also was a significant difference at the 5 percent level between the mean Occupational Aspiration Scores for participants and non-participants, that of the participants being higher. There was a difference in the two groups on mean score for General Intelligence, participants scoring significantly higher at the 1 percent level. The mean North-Hatt Score assigned to the planned job also was significantly higher at the 5 percent level for the group who participated in the follow-up study.

The mean grade-point average was higher for the group who took part in the follow-up study, but the difference was not statistically significant. Mean discrepancy between occupational aspirations and capability scores was lower for those who took part in the follow-up than for those who failed to take part; again the difference was not statistically significant.

Several tentative conclusions regarding the make-up of the groups are indicated. It may be inferred that the group that responded showed higher achievement according to the criteria used in this study. If this conclusion is correct, this study has not had an opportunity to look at those sample

Table 7. Difference between Means: Selected Variables Tested on the Basis of Participation Versus Non-Participation in the Follow-up Study

Variable	Means	Standard deviation	Number	Degrees of freedom	T-statistic
Capability Score					
Participants	-4.621	5.131	119		
Non-participants	-7.378	4.613	46	163	3.162*
Occupational Aspiration Score					
Participants	1.694	3.638	119		
Non-participants	0.191	3.243	46	163	2.434*
Discrepancy					
Participants	6.506	4.688	119		
Non-participants	7.300	4.962	46	163	-1.314
General Intelligence					
Participants	104.5	17.5	119		
Non-participants	96.0	19.6	46	163	2.6911**
Grade point average					
Participants	2.252	0.77	119		
Non-participants	2.097	0.76	46	163	1.1469
NORC planned job					
Participants	75.6	10.0	97		
Non-participants	69.3	10.9	34	129	3.0643*

* Significant at .05 level.
**Significant at .01 level.
T = 1.645 at the .10 level of significance.
T = 1.960 at the .05 level of significance.
T = 2.576 at the .01 level of significance.

members who potentially have the most problems. For example, there were indications that the non-participants were less capable in terms of educational achievement and this could easily carry over into ability and willingness to communicate and verbalize one's ambitions. The non-participants had lower 1965 Occupational Aspiration Scores than did the participants (this may be "good" in that it indicates a higher degree of objectivity about their capabilities than that shown by the participating group). Judging from findings of this study, it is highly probable that the group participating in the follow-up study showed a higher level of educational and occupational achievement than did the non-participants.

The reader will need to take the above information into account when using this study.

Summary of Model Results

The three variables most closely associated with greatest shifts in Occupational Attainment were 1) high school grade average, 2) residence outside Arkansas, and 3) White racial identity.

Respondents with highest and lowest 1965 Occupational Aspirations were most likely to have adjusted their job goals by 1971. Furthermore, Arkansas residents were more likely than out-migrants to have compromised their earlier level of aspiration. Upward adjustment of occupational goals was more typical of those who had received college or technical training.

Disparities between Occupational Attainment and Occupational Aspiration were larger among those who felt that their ability to perform their present job was above average than among those who felt that their job performance was average or below. Perception of opportunity for job advancement appeared to lessen disparities between job attainment and job aspiration. Those who chose to remain in Arkansas showed greater differences between attainment and aspiration than those who were willing to leave the state.

Occupations and Projected Occupational Needs

The distribution of occupations held by sample members in 1971 did not correspond closely to the occupational distribution for the general Arkansas population (Table 8). For example, while 26 percent of the sample held professional or related types of jobs in 1971, only 11 percent of the general population held jobs of this classification in 1970. Only 5 percent of the sample held managerial (category 2) positions, while 9 percent of the Arkansans were employed in such capacities. Over half of the occupational categories were underrepresented in the study group.

The greatest disparity between job aspirations and job attainment occurred among professional level (category 1) occupations (Table 9). In 1965, 55 percent of the follow-up sample had planned to have professional jobs, but by 1971 only 26 percent had reached this goal. In contrast, only 3

Table 8. Percentage Distribution of Employment by Occupation of Arkansas Residents, 1970 and Projection for 1975, and of Respondents in the Follow-up Sample, 1971

Occupational category[1]	Arkansas residents		Follow-up sample, 1971
	1970	Projected to 1975	
	Percentage		
Professional, technical, and kindred workers	11	11	23
Managerial, officials, and proprietors	9	9	5
Clerical and kindred workers	11	12	13
Sales workers	7	[illegible]	4
Craftsmen, foremen, and kindred workers	13	14	17
Operatives and kindred workers	21	22	15
Laborers, except farm and mine	7	6	10
Service workers except private household	13	13	6
Farmers, farm managers, and farm laborers	9	6	5
Totals[2]	100	100	100

[1]Occupational groupings are those used by the United States Bureau of Census Occupational Classifications until 1970, at which time the groupings were modified.
[2]Rounding errors may prevent percentages from summing to 100.

Source: Arkansas Dept. of Labor, Employment Security Division, "Arkansas Manpower Needs, February, 1970.

percent had aspired to occupations in the "Operatives" classification, but 15 percent were working in such jobs.

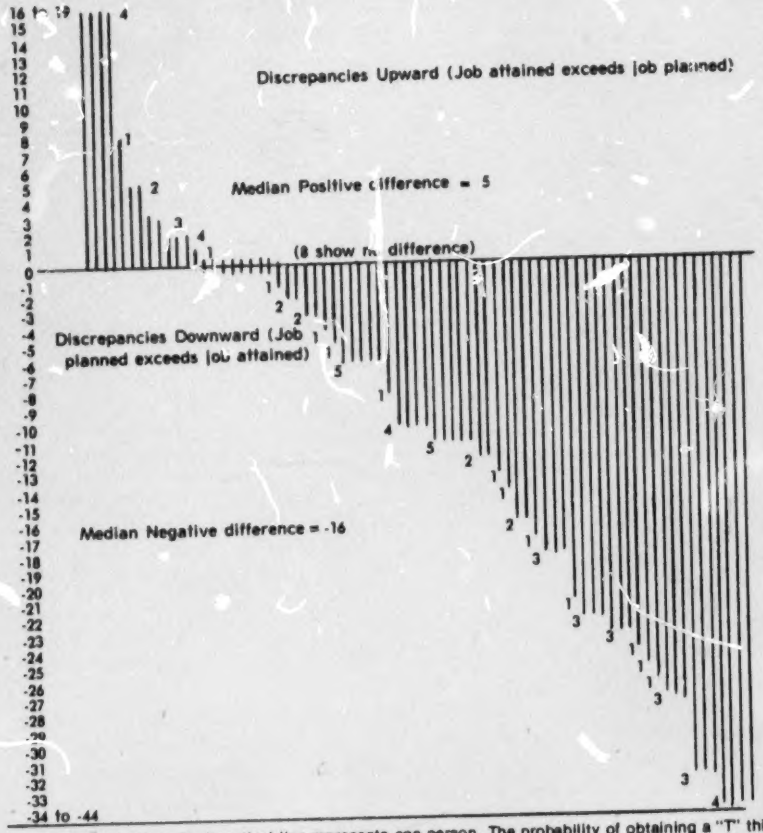
Both the selective nature of the sub-sample and the fact that the original sample members were chosen from a group of seniors who were likely to complete at least high school education help to account for the high percentage whose jobs fell within the professional category.

North-Hatt Scores of Occupations Planned Versus Jobs Entered

North-Hatt scores for jobs planned differed substantially from scores for occupations actually held (Table 10). The mean score for jobs planned was 74 while the mean score for jobs held was 63.

In only 13 cases were the North-Hatt scores for jobs attained higher than the scores for occupations to which respondents aspired (see chart). Scores were lower in 52 cases, and the same in 8. These findings support the conclusion expressed in the original study (6) that occupational aspirations were high in view of the projected availability of various types of jobs.

Point Discrepancies in North-Hatt Scores for Jobs Planned and Jobs Held in 1971


Discrepancies Upward (Job attained exceeds job planned)
Median Positive difference = 5
(8 show no difference)
Discrepancies Downward (Job planned exceeds job attained)
Median Negative difference = -16
-34 to -44

T = -6.415 with 74 df. Each vertical line represents one person. The probability of obtaining a "T" this large or larger by chance when the hypothesis of no correlation is true equals 0.0001.

Table 9. Follow-up Sample: Relationship of Planned Occupation to Occupations Held in 1971

Occupational category[1]	Plans of sample students in 1965[2]		Jobs held by sample in 1971		Difference	
	No.	Percent	No.	Percent	No.	Percent
Professional, technical, and kindred workers	40	55	19	26	-21	-29
Managerial, officials, and proprietors	7	10	4	4	-3	-6
Clerical and kindred workers	2	3	9	13	7	10
Sales workers	1	1	3	4	2	3
Craftsmen, foremen, and kindred workers	8	11	12	17	4	6
Operatives and kindred workers	2	3	11	15	9	12
Laborers, except farm and mine	4	5	7	10	3	5
Service workers except private household	2	3	4	6	2	3
Farmers, farm managers, and farm laborers	7	10	4	5	-3	-5
Totals[3]	73	100	73	100	0	0

[1]Occupational groupings are those used by the United States Bureau of Census Occupational Classifications until 1970, at which time the groupings were modified.
[2]Only those students who held fulltime jobs at the time of the 1971 survey are included in the comparison. A more complete picture of the entire sample's occupational plans, as stated in 1965, may be found in the 1965 study report.
[3]Rounding error may prevent percentages from summing to 100.

Table 10. Difference between Means Tests of North-Hatt Scores for Planned Occupations and North-Hatt Scores for Occupations Entered

Variable	Mean	Standard deviation	No	Degrees of freedom	t-Statistic
North-Hatt score for occupation planned	74	11	131	130	-7.0095**[1]
North-Hatt score for occupation entered	63	11	93	92	

[1]Significant at 1 percent level of "t".

Of the 13 instances where job attainment exceeded the level of aspiration, there was a mean difference of 5 points between the job planned and the job held. Generally the two jobs would fall into the same Census-defined job category. For example, student 104 who had planned to be a social worker was a teacher in 1972; both of these jobs are classified as "Professional, technical, and kindred" by the United States Census of the Population. In two cases, it appeared that the job held would be classified in a different and possibly more prestigious category than the job planned.

Student Number 91 had a partnership in a sawmill in 1971; this represents a 16-point increase over the truck-driving job he had planned to have. Student Number 123, who stated plans to be a typist, was a teacher in 1971. Educational requirements for these two jobs vary enough to make this an interesting difference.

Of the eight who had no difference in score (jobs planned versus jobs held), six were working in 1971 in the exact jobs planned. Two of these were teachers, one was a mechanic, and one was a vice-president and part-owner of a truck line (his father's business). In all cases where the students predicted their occupations accurately there were readily identifiable models available for the jobs in the community where they lived. The individuals could see exactly what qualifications were necessary for these jobs, and descriptions of activities connected with the jobs were known generally.

On the other hand, many jobs have only vague qualification requirements, and explicit details of the activities performed by people in these roles are not easily visible to a high school student in a rural environment. When persons living in a rural agrarian economy aspire to jobs not available in their immediate environments, their lack of knowledge of specific job opportunities and requirements may distort their perceptions. Role models for many occupations and requirements may distort their perceptions.

The short-term unrealistic nature of the subjects' Occupational Aspirations is dramatically illustrated in the lower part of the chart. The median negative difference was 16 points (compared with 5 for the upper part of the chart). One-fourth of total sample showed a discrepancy of 20 or more points in the negative direction; there were no 20-point upward discrepancies.

These differences may represent a large gap between expectations and realizations. For example, student Number 25 stated plans to be a biochemist; instead he became a laborer. Student Number 62 who expressed a desire to become a chemical engineer became an apprentice electrician. In this sub-group of the sample, aspirations were unfulfilled. Further study is needed to determine whether or not those with unmet aspirations have adjusted satisfactorily in the job market. Of course, it may well be that in future years a higher proportion of the respondents will realize their earlier occupational aspirations.

Income Comparisons of Sample and State

Income is a gross indication of Occupational Achievement. The incomes of the sample compared favorably with the incomes of other residents of Arkansas (Table 11). In the category, "Males, all ages, in Arkansas," the median income figure is $5,656. For the sample group, all males in their early 20's, the comparable figure is $5,824, or a divergence of

Table 11. Median Income of Sample Respondents [1971] Compared with Median Income of Arkansas Residents [1970][1]

Item	Median income by color		
	White	Black	All
		Dollars	
Sample respondents (1971)			
Males, ages 20 to 26	5,824	5,460	5,600
Urban	6,000	5,790	6,000
Rural	5,520	4,780	5,520
Arkansas, all income earners	5,567	2,544	4,950
Males, all ages	5,656	3,280	5,264
Urban	6,542	3,606	5,995
Rural, nonfarm	5,039	2,952	4,722
Rural, farm	4,543	2,413	4,275

[1]Source: Bureau of the Census, "General Social and Economic Characteristics, Arkansas, 1970," U.S. Dept. Commerce, PC(1), 5C, pp. 194 5.

only $168. Black members of the sample compare quite favorably with Black Arkansas males ($5,460 vs. $3,280).

Median income patterns for the sample closely resembled those for the state on the basis of residence and race. The urban population in both cases had a higher median income than the rural population, and the median income for Blacks was lower than for the total population.

Plans for the Future

Eighty-five of the 126 sample members stated in 1971 that they planned to acquire additional education or training during the next five years. This intention to upgrade skills indicates that the sample, as a group, had raised their level of Occupational Aspiration.

Just as educational plans point to rising aspirations, future income expectations may also so indicate. The sample members were asked how large they expected their annual income to be five years after 1971. On the average, the White respondent expected his income to increase from $6,149 to $11,829, or by $5,680 during the five years (Table 12). The standard deviations from the means ($1,605 for 1971 and $3,554 for 1976) perhaps

Table 12. Average Annual Income for Sample Respondents in 1971 Compared with Average Annual Income Expected Five Years from Then

Item	White		Black	
	Average income, 1971	Av. income expected by 1976	Average income, 1971	Av. income expected by 1976
Mean	$6,149	$11,829	$6,092	$11,926
Standard deviation	1,605	3,554	1,000	5,266

indicated both uncertainty and variability in expectation (the higher the standard deviation, the greater the indication of uncertainty and variability in expectation).

Summary and Conclusions

Education is a powerful agent for enhancing human welfare and promoting social development. The quality of education directly affects community leadership and influences the ability of individuals to earn a living and to cope with their social, personal, and economic problems. The formal school system can be an effective instrument for developing awareness and sensitivity, or it can be merely a credential-granting agency, out of tune with the needs of the modern world. Schools can transmit skills and encourage ambitions that are vital in a changing world, or they can transmit obsolete skills and maladaptive attitudes and values.

Data from this study corroborated the findings of other researchers in showing poor correspondence between occupational aspirations and occupational achievement. In 1965, of 165 male high school students interviewed from Little River and Sevier Counties, Arkansas, 70 percent overaspired in view of their measured capabilities. By 1971, the Occupational Attainment of 126 of this same group fell short of their earlier aspirations. Occupational Attainment was primarily a function of three variables: high school grade point average, residence outside of Arkansas, and White racial identity. The National Opinion Research Center (NORC) mean score of the jobs **planned**, as expressed in 1965, was 74, while the mean NORC score of jobs **held** in 1971 was 63. NORC scores for jobs held were higher than for those planned in only 13 cases.

If, as the authors of the first study argued, the students overaspired, one would expect downward adjustment in aspirations after 1965. The result was a mixed pattern, partly because the average capability scores of the follow-up respondents were somewhat higher than average scores of the 1965 group. Those who scored high in Occupational Aspirations in 1965 and who were not willing to leave Arkansas to get jobs did reduce their aspirations. But those who planned to obtain additional technical training or to take college work (and 86 of 126 did express such plans) tended to adjust their 1965 aspirations upward.

Occupational outcomes by 1971 showed a low level of correspondence with the occupational need distribution for the Arkansas and national labor forces. In 1965, 55 percent of the sample's 165 young men chose the occupational category, "professional, technical, and kindred workers," even though the projected 1970 Arkansas need was 11 percent and the national need, 14 percent. Twenty-six percent of those in the follow-up study were classified as "professional, technical, and kindred workers." In 1965, only 3 percent of the 165 young men chose the occupational category "operatives

and kindred workers," while the projected 1970 Arkansas need was 20 percent and the national need 18 percent. However, the follow-up sample contained 15 percent "Operatives and kindred workers."

Difference between 1965 occupational plans and 1971 outcomes were mainly a function of three variables: self-perceived job ability, residence, and perceived opportunity for job advancement. The difference between aspiration and attainment tended to be greater for those who bclived that they had above average ability and for those who preferred to live in Arkansas. In the first case, attainment exceeded aspiration, while the reverse was true in the second. Th[illegible]ho perceived that their jobs provided opportunity for advancement experienced smaller differences between aspiration and attainment.

A possible explanation for the findings that 1) the occupational attainments were relatively high, and 2) occupational aspirations were not adjusted downward might be that aspirations were oriented toward the long run. That is, the individual may say to himself, "By the time I'm 40, I plan to be manager of this food store." In this study, young men were interviewed after having been in the labor force for only five years. Yet, as a whole, the group held a higher proportion of the prestigious jobs in Arkansas than the population as a whole. Also, the median incomes of the sample population compared favorably with state averages.

Although the data indicated that students overaspired in terms of their measured capabilities, it was also true that the sample group was above average in both their level of education (all had at least a high school education) and in their level of performance in the labor market. When we remember that these young men were observed shortly after they had entered the labor force, it is apparent that they will have a much better chance of fulfilling their aspirations than was first thought in 1965. Although the study group's measured capabilities did not match their aspirations, one should recognize that capability is a multi-dimensional quality that may well increase over time.

Implications

Results of this study indicate a mis-match between occupational aspirations and job attainment. Of course, many of these respondents only five years out of high school have not reached the height of their occupational attainment. However, study results do support the need for more effective high school occupational counseling programs to provide students with a realistic basis upon which to evaluate potential job opportunities.

If manpower needs of the United States are to be met efficiently, the school system must attempt to educate students to meet employment needs. Business and industry might become increasingly involved in formal education, and vocational education programs may need to be expanded

and diversified.

Out-migration of many of Arkansas' most talented young people remains a serious problem. Migration patterns have been and continue to be a serious deterrent to the improvement of educational systems of rural areas. Many of the more occupationally successful young people interviewed in this study had left Arkansas. To some people, financing education means providing a travel subsidy to young people willing to leave their home towns and state, an attitude that furnishes a rationale for neglecting to improve school systems. A further consequence of the out-migration of younger and better educated adults is that the remaining population lacks the resources to adequately support the educational system. Hopefully, as greater numbers of desirable jobs become available in the state, historical trends will reverse and Arkansas will be able to retain a higher proportion of its high school and college graduates.

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APPENDIX

The instruments administered to original sample members included the following:

1. The General Aptitude Test Battery (GATB). This test was developed by the U.S. Employment Service for use in guiding persons seeking work. The nine aptitudes measured by the test are intelligence (general learning ability); verbal, numerical, and spatial aptitudes; form and clerical perception; motor coordination, and manual dexterity.
2. Kuder Preference Record—Vocational—Form C. An interest test widely used in high schools, the Kuder measures interests in the following areas: outdoor, mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical.
3. Guilford-Zimmerman Temperament Survey. This instrument assesses personality traits including general activity, restraint, ascendance, sociability, emotional stability, objectivity, thoughtfulness, friendliness personal relations, and masculinity.
4. Davis Reading Test. This instrument was designed to evaluate the reading ability of junior and senior high school students. Subjects are expected to read specific passages and then respond to questions tapping central idea, mood, authors' point of view, and structure of the passage. Two scores are derived: level of comprehension and speed of comprehension.
5. Social Class Value Orientation Inventory. This test was designed to determine middle-class or lower-class orientation. It comprises the following dimensions: time orientation, control of destiny, presentation of self, and social world.
6. The Rural-Urban Orientation Inventory. This inventory was designed to determine the rural-urban tendencies of the subject. Its three dimensions include: individual autonomy over actions and time use, moral attributes in man's work or nature, and social density, distance, and heterogeneity.
7. Haller's Occupational Aspirations Scale. This is an eight-item, multiple-choice instrument permitting responses at both the realistic and idealistic levels of occupational aspiration. Both realistic and idealistic aspirations are elicited for two time periods: short range (end of schooling) and long range (at age 30). Occupational titles are ranked in terms of social prestige.